CALLOGOBIUS AMIKAMI A NEW SPECIES OF GOBY (GOBIIDAE) FROM THE RED SEA

by

Menachem GOREN (1), Aharon MIROZ (2) and Albert BARANES (3)

ABSTRACT. - A new species of a goby of the genus *Callogobius* was found in Eilat, Northern Gulf of Aqaba (Red Sea). The species is characterized by the following: 24 scales along the body; 9 transverse scale rows; 8 predorsal scales. Dorsal fins: VI, I 10; Anal fin: I 8. Posterior oculoscapular canal as well as preopercular pores absent. Ctenoid scales on posterior part of body. Brown vertical bars on body.

RÉSUMÉ. - Une nouvelle espèce de gobiidé, *Callogobius amikami*, a été trouvée dans les eaux d'Eilat, au nord du golfe d'Aqaba, mer Rouge. Elle est caractérisée par 24 écailles en série longitudinale, 9 en série transversale et 8 écailles prédorsales. Les formules sont pour les dorsales VI, I 10 et pour l'anale I 8. Il n'y a ni canal oculoscapulaire postérieur ni pores préoperculaires. Des écailles cténoides sont présentes sur la partie postérieure du corps. Le corps est clair marqué de barres verticales brunes.

Key-words. - Gobiidae, *Callogobius amikami*, ISW, Red Sea, Taxonomy, New species.

Thirty one nominal species have been assigned to the genus *Callogobius* by McKinney and Lachner (1978a). Subsequent authors (McKinney and Lachner 1978b, 1984; Goren 1978, 1979, 1980) increased the number of species to 36. Eleven of these species possess a low scale count along the body (26 or fewer): *centrolepis* Weber, 1909; *shunkan* Takagi, 1957; *snelliusi* Koumans, 1953; *irrasus* (Smith, 1959); *maculipinnis* (Fowler, 1918); *plumatus* (Smith, 1959); *kuderi* (Herre, 1943); *vanclevei* (Herre, 1950); (data from McKinney and Lachner, 1978a, table 1) *crassus* McKinney and Lachner, 1984; *bauchotae* Goren, 1979, and *dori* Goren, 1980.

McKinney and Lachner (1984) synonymized *shunkan, snelliusi, irrasus, kuderi* and *vanclevei* with *maculipinnis*, reducing the number of *Callogobius* with low scale count to six.

A specimen of a new *Callogobius* belonging to this group was collected in Eilat (Northern Gulf of Aqaba) and is described herein.

Four species of *Callogobius* are known from the Red Sea. Two of them - *flavobrunneus* and *maculipinnis* are known from all parts of the Red Sea as well as from parts of the Indian Ocean, while the other two - *dori* and *clarki* - are endemic to the Red Sea, and are known from central and northern Red Sea only.

The finding of the new species (which was also found in northern Red Sea) increases the number of the *Callogobius* species known from the Red Sea to five.

---

(1) Department of Zoology, Tel Aviv University, 69978 Tel Aviv, ISRAEL.
(2) Coral World, P.O. Box 829, Eilat, ISRAEL.
(3) The Interuniversity Institute of Eilat, P.O. Box 469, Eilat, ISRAEL.

Cybium 1991, 15(4): 299-302.

MATERIAL AND METHODS

The fish sample listed here are deposited in the fish collection of the Zoological Museum of Tel Aviv University (TAU).

Terminology of cephalic sensory system as in Lachner and McKinney, 1974. Counts and measurements as in Goren, 1985. Abbreviations: SL = standard length; TL = total length.

A key to the Red Sea species of *Callogobius*.

1a. Pelvic fins fully united, 15 or fewer predorsal scales 2
1b. Pelvic fins connected only at their base, more than 15 predorsal scales .... *flavobrunneus*

2a. Sensory pores on head absent .... *clarki*
2b. Sensory pores on head present 3

3a. Three pores on preopercular margin, posterior oculoscapular canal present .... *maculipinnis*
3b. No pores on preopercular margin, posterior oculoscapular canal absent 4

4a. Second dorsal and anal fins with 9 and 7 segmented rays (respectively); body uniformly brownish .... *dori*
4b. Second dorsal and anal fins with 10 and 8 segmented rays (respectively); body light (white-yellowish) with vertical brown bands .... *amikami*

CALLOGOBIUS AMIKAMI SP. N.

(Figs 1, 2)

Material examined

Holotype. - TAU P-10321, male, Eilat, Israel. Depth 6 m. Leg. A. Miroz. 28 June 90.

Holotype measurements (in mm)

TL 39.2; SL 28.4; head length 8.6; body depth 7.0; eye diameter 2.3; pectoral fin length 9.3; pelvic fin length 6.4; longest ray in first dorsal fin (4th) 7.6; longest ray in second dorsal fin (7th) 7.4; longest ray in anal fin (6th) 7.3.

Etymology

Callogobius amikami is named after Mr. Amikam Gorovitch who was killed in a diving accident in Eilat.

Diagnosis

A *Callogobius* species with 24 scales along the body; 9 transverse scale rows; 8 predorsal scales. Dorsal fins: VI, I 10; Anal fin: I 8. Posterior oculoscapular canal as well as preopercular pores absent. Ctenoid scales on posterior part of body. Brown vertical bars on body.

Description

Body elongate and laterally compressed. Head depressed. Mouth small and oblique, lower jaw projected anteriorly. Maxilla reach to below posterior nostril. Two to three rows of pointed teeth on each jaw, the outer enlarged. No canines. Tongue truncate. Anterior nostril, in a long tube, above upper lip. Posterior nostril, a short tube, at the base of the anterior one. Many papillate flaps on head

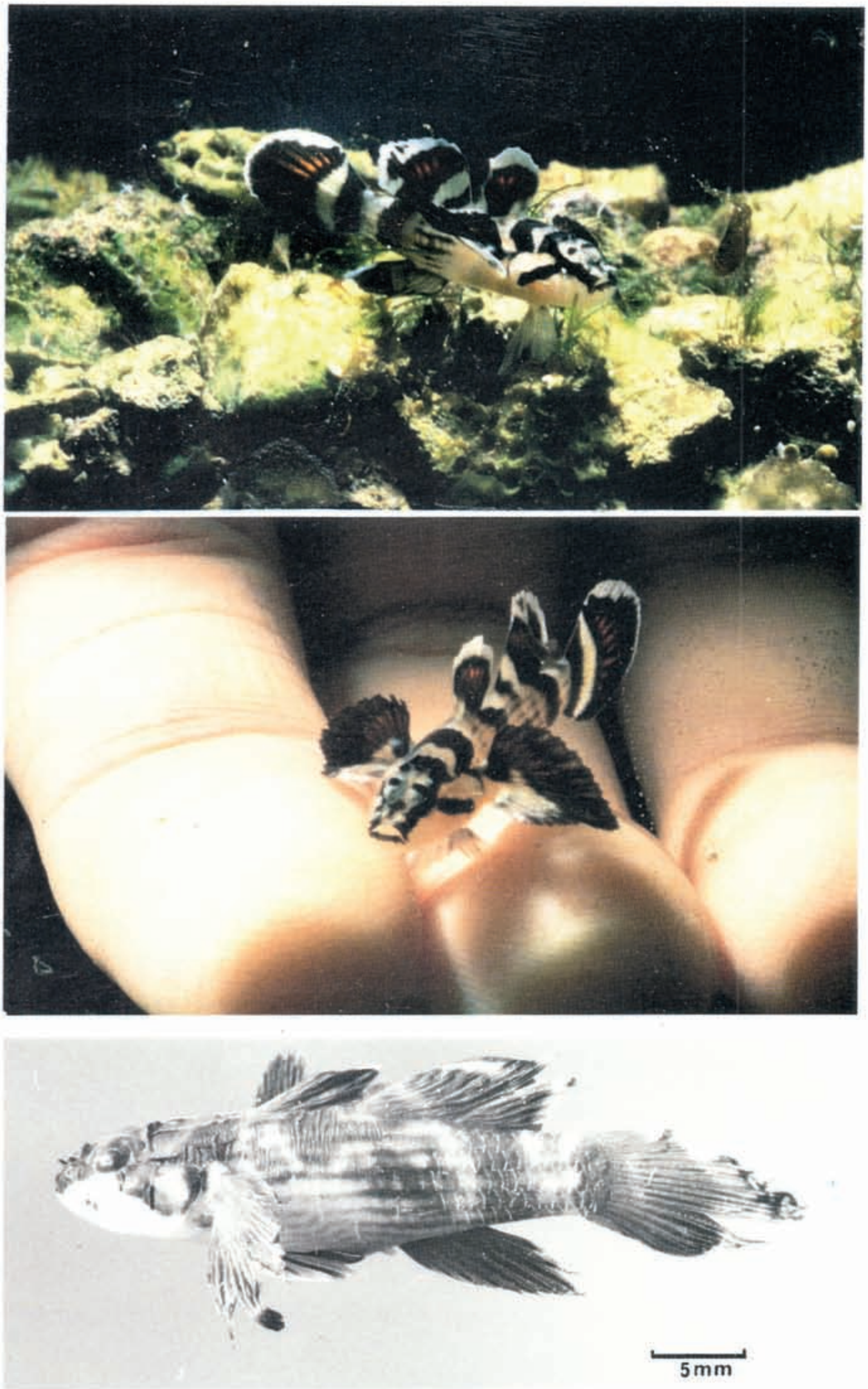

Fig. 1.- *Callogobius amikami* sp. n., holotype: TAU P-10321, 39.2 mm TL.

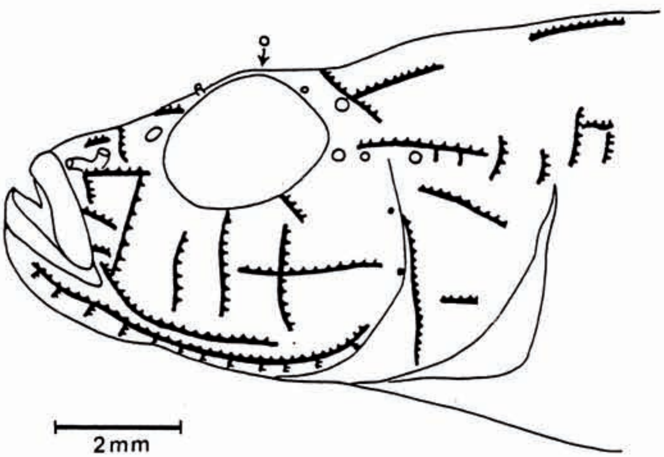

Fig. 2. - Cephalic sensory system of holotype of *Callogobius amikami.*

(Fig. 2). Gill opening restricted reaches to below pectoral base. Gill rakers on anterior gill arch 0 + 0 + 4.

Cephalic sensory system. - Nasal pores are large holes in front of mid eyes; anterior and posterior interorbital pores, singles, in short tubes; supra otic anterior otic, posterior otic and inter temporal pores present. Anterior, posterior temporal and preopercular pores absent. An additional pore between posterior interorbital pore and supra otic on left side of the fish (Fig. 2).

Proportions. - Standard length (SL) 72.4% of total length; head length 30.3% of SL; body depth 24.6% of SL; eye diameter 26.7% of head length; interorbital space 9.3% of head length; pectoral fin length 32.7% of SL; pelvic fin length 22.5% of SL; longest ray in first dorsal fin (4th) 26.7% of SL; longest ray in second dorsal fin (7th) 26.0% of SL; longest ray in anal fin (6th) 25.7% of SL; the distance between snout and origin of first dorsal fin 39.1% of SL; the distance between snout and origin of second dorsal fin 39.1% of SL; the distance between snout and origin of anal fin 39.1% of SL.

Scales. - 24 scales along the body; 9 transverse scale rows; 8 predorsal scales; 4-6 rows of scales on opercle; 3-4 rows of scales on cheek. Prepelvic area scaled. Scales on body posteriorly to a vertical from 4th segmented ray are ctenoid. Remaining scales cycloid. Predorsal scaling almost to eyes. Scales on opercle and cheek mostly covered by epidermis.

Fins. - Dorsal fins: VI, I 10; anal fin: I 8; pectoral fins: 18; caudal fin: 17 segmented (among them 15 branched). Dorsal and anal fins slightly longer than body depth when erected. Anterior dorsal fin is longer than the posterior one. Pelvic fins reaching the anus. Fraenum well developed. Caudal fin rounded.

Vertebrae. - 26 (10 + 16). Formula of first dorsal fin pterygiophores 3-22110 (method of count as in Birdsong *et al.*, 1988).

Colour (life). - Body white with eight narrow brown longitudinal lines. Two vertical brown bars; the anterior one is a continuation of a wide diagonal bar which is present on second dorsal fin and the second one is on caudal fin base. Four brown bars on the back; the posterior one is small at the origin of second dorsal fin, another small bar at the end of first dorsal fin. A wide bare connects the bases of the pectoral fins and another bar on nape. Small brown blotches behind eyes. A narrow diagonal bar from the nuchal bar to angle of mouth, and another diagonal bar from below eyes backward to mid opercle. Caudal fin dark brown with a wide vertical white bar at the base, and white margins around the fin. First dorsal fin white with a very large dark blotch at mid fin. Second dorsal fin with a large diagonal band. Pectoral fins with wide black margins (except its ventral part). Anal fin dark brown with a white round blotch on the anterior part.

Remarks

The low scale count species of the genus *Callogobius* differ from *amikami* as follows: *crassus* lacks cephalic sensory pores and the counts of its dorsal and anal segmented rays are lower (7-8, 6 respectively); *bauchotae* has separated pelvic fins and fewer dorsal and anal rays than *amikami* (9, 7 respectively); *maculipinnis* can easily be distinguished from *amikami* by the presence of anterior and posterior temporal pores as well as peropercular pores (which are lacking in *amikami); centrolepis, plumatus* and *dori* differ from *amikami* in both: fewer segmented rays in dorsal and anal fins (9 and 7 respectively) and with first dorsal fin lower than the second one. In addition *dori* is distinguished by its colour (uniform dark brown).

Habitat

The fish was collected at depth of 6 m. It inhabits an area among coral fragments and granite rocks far from the coral reef. In captivity the fish was active at night and hid between rocks during day time.

Acknowledgements. - We are grateful to Mr. W. Ferguson for the drawing and to Mr. A. Shoob for the photographs.

REFERENCES

BIRDSONG R.S., MURDY E.O. & F.L. PEZOLD, 1988. - A study of the vertebral column and median fin osteology in gobioid fishes with comments on Gobioid relationships. *Bull. mar. Sci.* 42(2): 174-214.

GOREN M., 1978. - A new gobiid genus and seven new species from Sinai coasts. *Senckenbergiana biol.* 59: 191-203.

GOREN M., 1979. - *Callogobius bauchotae* new species from Marshall Island (Gobiidae: Pisces). *Cybium*, 3(7): 41-44.

GOREN M., 1980. - Red Sea fishes assigned to genus *Callogobius* Bleeker with a description of a new species (Teleostei: Gobiidae). *Israel J. Zool.*, 28(4): 209-217.

GOREN M., 1985. - A review of the Gobioid fish genus *Monishia* Smith, 1959 of the Western Indian Ocean and the Red Sea, with descriptions of two new species (Pisces: Gobiidae). *Contrib. Sci. Natur. Hist. Mus. Los Angeles County*, 360: 1-9.

LACHNER E.A. & J.F. MCKINNEY, 1974. - *Barbuligobius boehlkei*, a new Indo-Pacific species of Gobiidae (Pisces), with notes on the genera *Callogobius* and *Pipidonia*. *Copeia*, 4: 869-879.

MCKINNEY J.F. & E.A LACHNER, 1978a. - Two new species of *Callogobius* from Indo-Pacific waters (Teleostei: Gobiidae). *Proc. biol. Soc. Washington*, 91(1): 203-215.

MCKINNEY J.F. & E.A LACHNER, 1978b. - A new species of gobiid fish, *Callogobius stellatus* from Flores Island, Indonesia (Teleostei: Gobiidae).- *Proc. biol. Soc. Washington*, 91(3): 715-723.

MCKINNEY J.F. & E.A LACHNER, 1984. - *Callogobius crassus* from Indo-Pacific region (Teleostei: Gobiidae). *Proc. biol. Soc. Washington*, 97(3): 627-631.

Reçu le 26.041991.
Accepté pour publication le 28.10.1991.